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Grassland and Farmland as Factors in the Cyclical Development of Eurasian History

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This paper might be called a *study of equipment eras*—or the interacting influences of equipment and culture in certain environments.

Man is a tool-using animal, and there is a tendency to confuse the results of mental or personal qualities and the results of the equipment that we may have at hand. Consider for a moment a group of European primitives, so-called, who left cultural and skeletal remains in the caves of France some 20,000 years ago. Anthropologists have named them Cromagnon. If they were living today most of us would doubtless call them savages, regard them as inferior beings. Sir Arthur Keith tells us that the Cromagnons had larger brain pans than we have. But we of this generation have *inherited* agriculture with its crops and beasts, also engines and machines, transport and buildings, and books, the master tool, the mother of tools.

It is easy for us in our cultural riches to lose sight of the scanty cultural inheritance of Cromagnon man. He and his parents were living in the collector stage of economics. He plucked his living from the natural environment with the aid of his fingers, toes and teeth, and with equipment of wood, fire, flint, shells, bone, sinew and skins. Stone Age we call it. He ate everything that was digestible,—beast, bird, fish, reptile and insect, seed, leaf, stem and root, and sometimes the neighbors, but that was usually ceremonial. He probably lived a life filled with terrors and what we would regard as impossible hardship.

CLIMATIC REGIONS

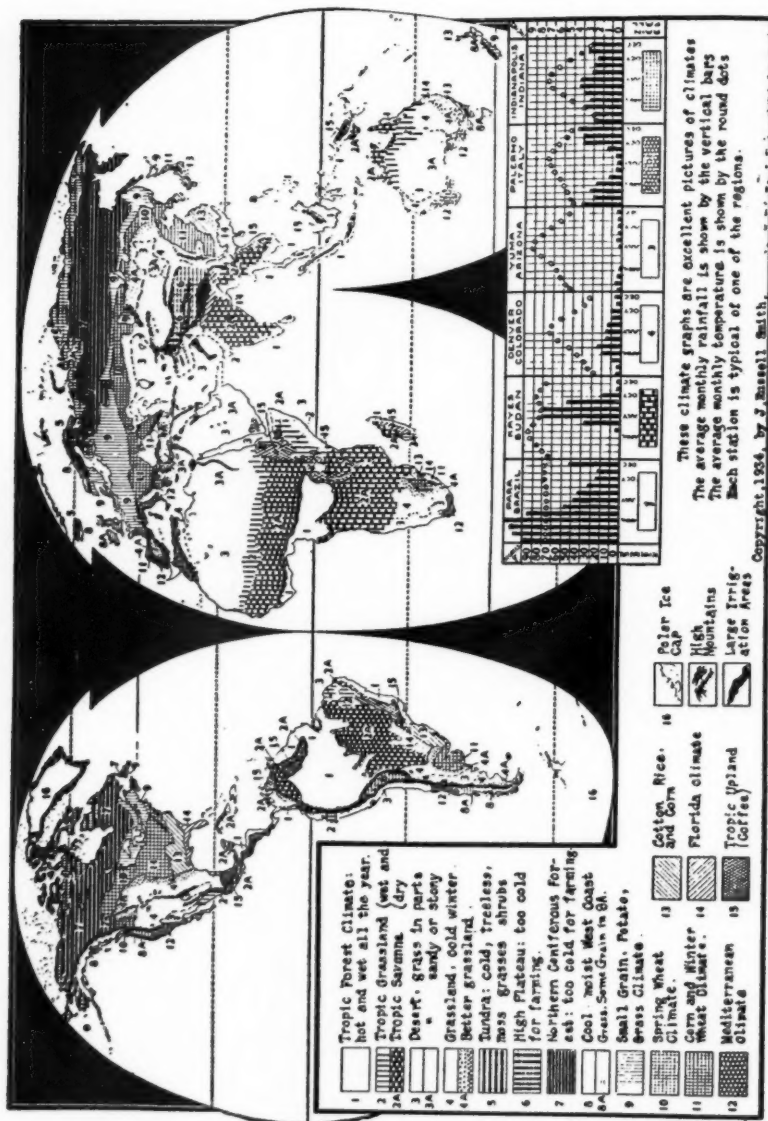


FIG. 1.—This map of climatic regions is probably the greatest of all maps in enabling us to understand the world in which we live. One can say nothing about North America or United States or California *as a whole*; but Mediterranean climate (No. 12) is essentially the same in seven areas in six continents.

It is one of the greatest achievements in human history that Stone Age Man made some sort of living in every continent except Antarctica. Archeologists and anthropologists trace Stone Age man from shores of the Arctic Sea in Greenland to the chill and reeking wetness of Tierra del Fuego; from Alaska to Newfoundland; from Gibraltar to Kamchatka; from the Siberian Tundra to South Africa, Tasmania and the far islands of the Pacific. Stone Age man made a living in every important type of environment except the glacial ice cap; he was even found living cheerfully at the very foot of the ice cliffs in Greenland.

Not only did Stone-Age man make a living, such as it was, in every type of environment,—he and the women supported their offspring, maintained the race, formed communities, developed rules of conduct (laws if you like), and created a literature in the form of folklore. They struggled with external nature, and, like the rest of mankind, with human nature.

These men and women in the smoky cave, the pit house, the skin tent, or merely sleeping in the open by fire or without it, were vexed by two problems that vex us today—the struggle for possessions and the lust for position, preferment, power.

Howard H. Brinton, a living Quaker writer of distinction, says: "Every one has within himself, a potential Hitler as well as a potential St. Francis."

With these two types in mind we should note that man's progress depends upon two things—first, keeping down his own potential Hitler, with the aid of education, morality and religion; and second, fighting down his neighbor's Hitler. Controlling one's neighbor's Hitler presented a social problem, and for this man probably was forced to invent government.

In the Stone Age, as now, the external Hitler tendency, the bully, *had* to be kept in check. Control doubtless began as family fights and grew into clan, tribe and other forms of group control. Even in prehistoric times, government, formal or informal, developed in all climes, in all societies and in well-nigh myriad forms.

When man lived by collecting, only a few people could live together in any one place. Population per square mile was limited by the amount of available food. One group could force another group out of hunting grounds, but one group had difficulty in governing other groups. The political group, if one may use the word, was small. Although government may have been invested only in family, clan or tribe, or in a village group, primitive government usually was inclusive in the scope of its control over individual freedom. Have not the elders of all generations said, "We do it this way"? Anthropologists are emphatic concerning the conservatism of primitive man. That is certainly one reason why the Stone Age lasted so long,—long enough to achieve its amazing uniformity of economy and its world-wide distribution.

Many anthropologists believe that this almost static period of human history may have existed for 500,000 years since our ancestors first began to use tools.

A new era began with the use of domesticated plants and domesticated animals. When some 97 per cent or 98 per cent of the half million years of human history had passed, perhaps 10,000 or 15,000 years ago, changes began to happen. Men and women, or perhaps we should say women and men, began to plant seed and to grow and cultivate crops. With a more stable and dependable food supply human beings could settle down in a village for most of the year, or even, in rare instances, for a period of years. Soil exhaustion usually brought declining yields and a new patch was brought under cultivation. This process was repeated until finally the entire village had to move to fresh land.

Patch farming was a great improvement over the collecting economy. It permitted a larger village group and lessened the need to move from place to place. Patch farming gave new leisure, more time for mind to play upon mind. Nevertheless, the problem of soil fertility usually kept the settlement from becoming a large one. It also prevented the group from remaining at the same place for any great length of time. These conditions existed on most of the soil areas of the world.

Patch farming was followed by the domestication of animals, especially in Egypt, the Near East and Central Eurasia. The tough shoulders of the ox and donkey began to drag man's burdens for him some 6,000 years ago in Mesopotamia. The sheep and goat gave skin and flesh by herding instead of hunting. These animals also gave milk as did the cow. The tamed offspring of the wild boar gave roast pork, and the hen gave eggs without man having to seek the nests of wild birds in the forest. The new environment produced by the stimulus of crops, domestic animals and larger residence groups seems to have produced a mental emancipation that gave new freedom to the inventive type of mind.

A NEW ERA, BASED ON LARGER HUMAN GROUPS, HAD ITS ORIGIN IN THE
PERMANENT FERTILITY OF THE IRRIGATED VALLEYS OF EGYPT,
MESOPOTAMIA AND THE INDUS

In Egypt, Stone Age man found that the recurring floods fertilized his land each year. As a result he could stay in the same place generation after generation. Large settlements soon developed.

This was something new in the world. Revolutions emerged from it. Gradually many little governments came under one ruler, the governmental unit grew until finally the prowess of one ruler brought all Egypt, with its millions of people, under one government. For six thousand years the Nile

Valley has continuously supported its heavy population by benefit of the annual automatic deposit of mud. The Nile is the most regular, most orderly, most easily usable large river in the world. It has well earned the affectionate name of "Father Nile."

The fertility of the irrigated lands along the Tigris and Euphrates was replenished in somewhat the same way. But as compared with the Nile the Tigris and Euphrates were wild and disorderly rivers. The maintenance of irrigation in Mesopotamia required more labor than in Egypt, and a continuously effective social organization was necessary. Like Egypt, Mesopotamia supported heavy populations, towns, cities, kingdoms more than 5,000 years ago.

The recent excavations of Mohen-Jodaro on the lower Indus show somewhat similar developments about the same time. These three populous valleys supported themselves by irrigation on wide-spreading alluvial lands with a dry warm climate.

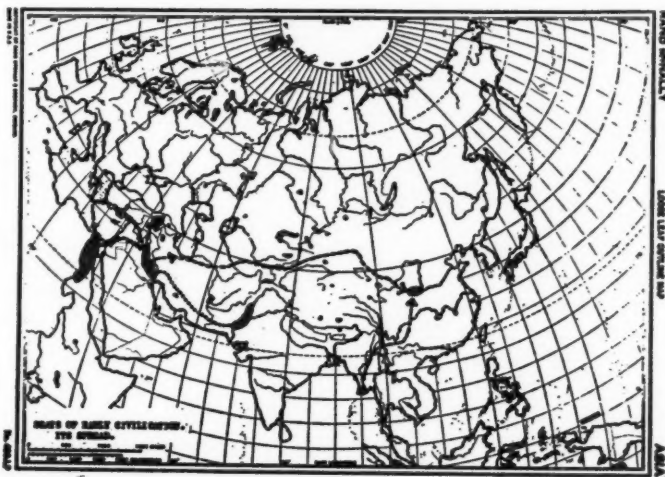


FIG. 2.—This map makes it easier to consider the three valley cultures as one civilization. Why not call it the Irrigated Valley Civilization?

In these hot dry valleys men lived under the compulsion of the need to work their crops in a season of flowing water, and under the near-compulsion to leisure in the season of drought. There was also the further compulsion of governments. These factors of surplus food, leisure time, large business enterprises, the desire for self-expression and the compulsion of strong government produced writing, libraries, codes of laws, pyramids and temples,—cultures that were in many respects much like our own.

It is now generally agreed that the wheel and axle, the cart and the beast-drawn plow were first used somewhere between the Persian Gulf and the Syrian shore at or about 4,000 B.C.—perhaps earlier. It is further agreed that this important invention was made only once in human history. The spread of the wheel and axle to all continents has been definitely traced from this one source.

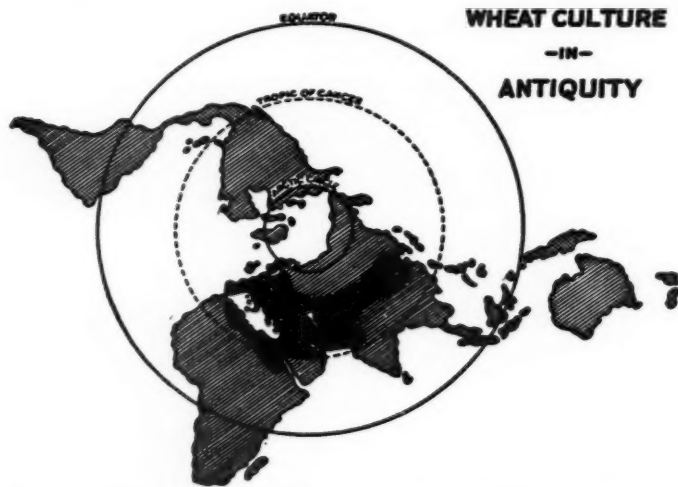


FIG. 3.—(After Carl Bishop) Wheat had climatic limitations to its spread. It does not thrive in the wet tropics.

Archeologists are continually finding proof that commerce existed at this early time between Egypt, Mesopotamia and the Indus Valley. Because of these exchanges these earliest centers of heavy population, cities and city culture may legitimately be considered one civilization in a sense similar to our use of the term Western Civilization.

This new culture of the three valleys with its stupendous advance over previous cultures was, at base, a result of the enduring soil fertility. For the first time in human history large sedentary populations could depend upon the permanence of their food supply. Generation after generation men could live in the same place. They could accumulate *things*. They had leisure. When they learned to write, they soon recorded *knowledge* and built libraries in which to store it. Thus three dry valleys became the cradles of civilization and finally the teachers of the human race. From this base many culture elements have spread to all parts of the world. It is fortunate for those of this generation that the Mesopotamians wrote on enduring tablets of clay.

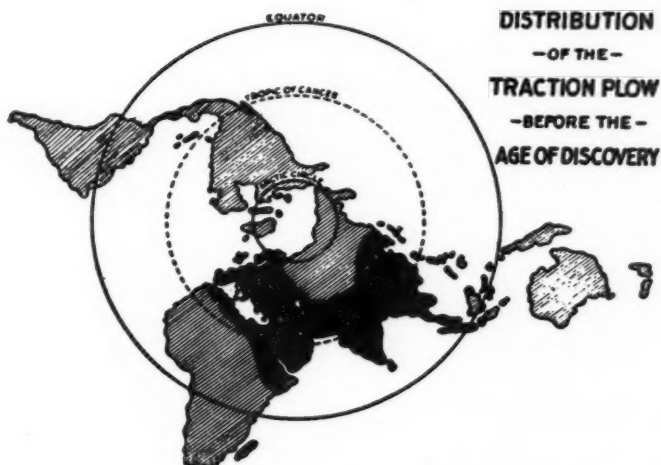


FIG. 4.—(After Carl Bishop) The plow had wider spread than wheat. It was drawn by ox, buffalo and donkey and occasionally the elephant.

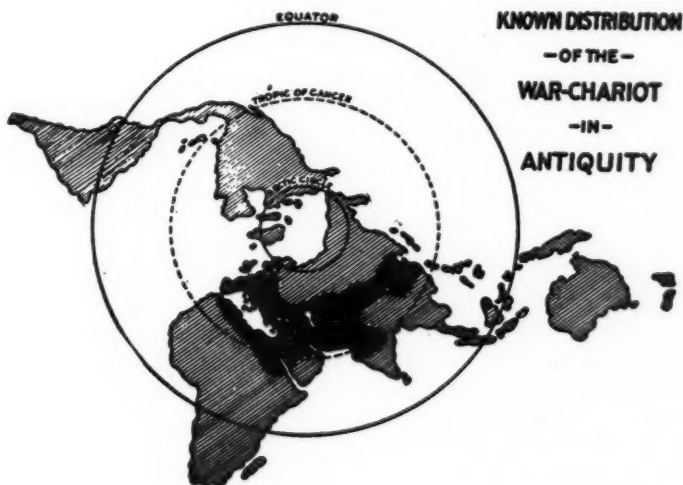


FIG. 5.—(After Carl Bishop) The war chariot came later than the plow. It depended upon the horse. The open grassland of Central Eurasia and the Zungarian Gate (see figure 6 and figure 17), an opening in the mountains west of China, furnish an easy passageway for men and ideas.

Then, as now, men who traveled carried with them ideas, techniques and various culture elements. A trail of fragments of painted pottery leads from Shushan, near the eastern edge of Mesopotamia, and marks the road by which culture elements went from Mesopotamia to China. Through this dry land a natural road proceeds from oasis to oasis. Where mountain streams reach the plains at the foot of the mountains natural refreshment stations exist. These fertile spots encourage travel across Iran, Western Turkestan, and Eastern Turkestan. Thence the trail continues eastward across Mongolia and down the Wei River Valley, past the present City of Sian and on to the great bend of the Hwangho at the southwest corner of the Province of Shansi.

No one knows when culture elements first began to pass northeastward from Mesopotamia over these stepping stones of fertility. This seems to make logical the Chinese claim that Chinese civilization had its origin in the Sian Valley near the great bend of the Hwangho. This Sian Valley was the first place at which this route across mountain and desert delivered culture elements from the west to men living in good farm land.

This first center of the present Chinese culture had a rare combination of qualities. There was enough rain to support agriculture, and there was loess soil. This wind-blown gift of deserts that lay to the west is the closest approach on earth to the perennial fertility of the annually flooding river valley. Let a farmer plow the top foot of loess and let the soil wash away or blow away, it matters not. The second foot is as good as the first; the twentieth foot is as good as the second. Here then was another basis for an agriculture that could endure for centuries.

Generation after generation of men in the Wei Valley loess had the advantages of permanent fertility of the soil. Meanwhile the mind of man was fertilized by the arrival of cultural elements from Mesopotamia and the steppes. Still another stream of culture elements came to the Sian Valley from India, by way of the Burma Road. Sinologists say that fowls and rice were early arrivals over this route.

Besides the fertility base of loess vouchsafed by nature, the farmer adopted two fertility measures whose effectiveness is unrivaled by anything outside the three great valleys. The Chinese method of cultivating rice in the paddy fields conserves soil perfectly and adds a touch of fertilizing mud. The other fertility device is that of collecting human excrement and returning it to the land. The Chinese have systematically applied this device for many centuries. It is well nigh impossible to over-estimate its importance as a means of support to Chinese civilization. Thus, fertility, enduring or preserved, stands out as the basis for the development and endurance of the Chinese civilization. These factors gave to these people the combination

of time and continuity similar to that which accompanied the rise of cultures in Egypt and Mesopotamia.

The Chinese received many culture aids from the outside, but they devised their own system of writing and made many important inventions on the basis of their own native wit and the stimuli from the Near East and India. China may be regarded as one of three subsequent cultures that leaned heavily in their beginnings on culture elements from the three great irrigated valleys.

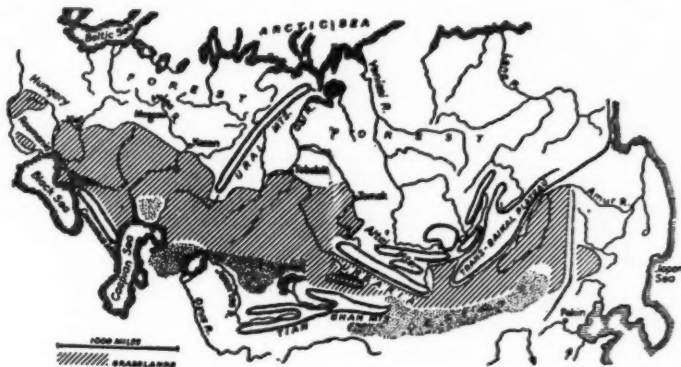


FIG. 6.—The Eurasian Grassland as shown by Mackinder. Note the scale of miles.

Culture elements traveled northwestward as well as northeastward from the centers of its beginning. Between 2000 B.C. and 1400 B.C. the Island of Crete was one of the most highly civilized places in the world. There is evidence that the people of Crete learned from the people of Mesopotamia by way of Anatolia and the stepping stones furnished by the Aegean Islands. Knowledge also traveled by direct voyages to Egypt, only 340 miles distant.

The Aegean culture was spreading from island to island, and had produced the famous cities—Tiryns and Mitylene on the mainland of Greece, whose cultural remains, so unlike those of the Classic Greeks, were long a puzzle to archeologists. Knossus, the ornate and learned capital of Crete, was destroyed about 1400 B.C., nearly 3400 years ago, but that date was more than 2000 years *after* the Sumerians had developed a complicated civilization and were filing away its amazing records on their durable tablets of clay.

While culture was spreading outward from its places of origin *something was brewing in the grasslands of central Eurasia*,—that vast unbroken plain that stretches from the Carpathians to the Altai and Tian Shan, and from the Caucasus and the mountain rim of Iran to the Great Northern Forest.

This vast grassland was an inhospitable area for the Stone-Age man before he had domestic animals. There was grass, of course, on most of its extent, and fleet-footed game. But wood and natural shelter were scarce except along the mountain and northern forest borders and along the banks of the few streams that crossed the plain. The patch farming of Stone-Age man was largely limited to these spots in the vast plain, such as the banks of the Oxus, Syr Darya, Don and other rivers, that were favored with wood, water and possible garden patches.

A new and very different era began when the man of the plains got sheep, goats, cattle and, lastly, the horse. The steppe people domesticated the horse (E. A. Spiser of the University of Pennsylvania concurs), and it became thoroughly integrated into every feature of the life of the people of the steppes. A new force, a new dynamic had appeared upon the Eurasian scene—the man on horseback. Here was revolution. It upset the affairs of man and was far-reaching in its effects. Indeed, the man on horseback has had but two analogs in human affairs,—steam transport and the airplane.

Carl Bishop, of the Freer Museum in Washington, says that the Indo-European languages were developed by these horse-using people on the steppes somewhere in southeastern Europe or southwestern Asia. He further states that these people whom we call Indo-Europeans had the word for wheeled vehicle before they separated into eastern and western groups. Louis H. Gray concurs.

These Indo-Europeans of the steppes and the horse-using Turanians who appeared later in the same area, have profoundly influenced the history of Europe and Asia, both as spreaders of culture and as destroyers of states and civilizations. It is as destroyers that they made their conspicuous contribution.

The nomad lives by flocks, the flocks live by grass. Animals must move to obtain grass, *and* man must move with the animals. The nomad has mobility,—here today, gone tomorrow, and mobility is a very important factor in warfare. It is also a sad fact that the grassland can produce more men than it can feed. Thus there exists the expulsive force of hunger. These factors make migration so easy as to be almost a part of the social organization. Many will be familiar with Ellsworth Huntington's thesis to the effect that periods of drought and scanty grass made an expulsive force that sent Central Asian nomads to overrun surrounding lands. Farmer peoples living east, west and south of the Eurasian plains had abundant and oft-repeated cause to mourn the fact that such a region as the Eurasian grassland existed.

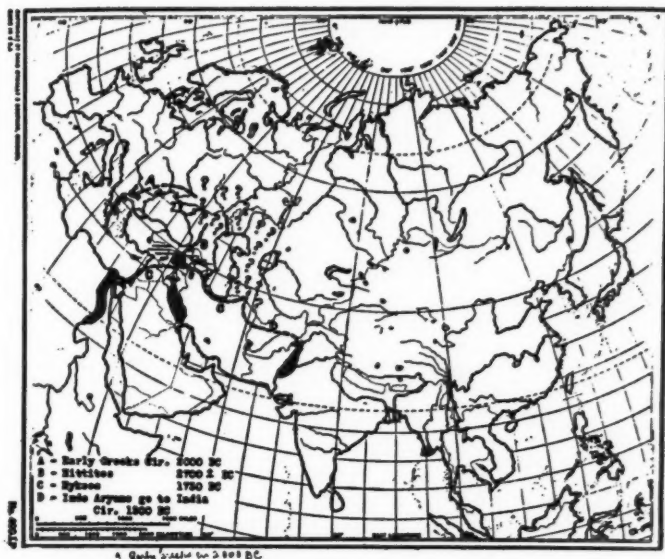


FIG. 7.—The question marks suggest the area, limits unknown, from which the grassland poured out its surplus sons upon their migrations, so destructive to the advanced cultures.

About 2000 B.C. bands of nomads from the steppes began working their way around the western end of the Black Sea and southward through Thrace and into Greece. They were shepherds accompanied by their flocks and with rude carts loaded with household goods and drawn by oxen. These people later became the ancestors of the Classic Greeks. By 1400 B.C., or in about 600 years, these shepherd migrants had learned from the more cultured Aegeans to build ships. In their ships they sailed to Crete and conquered it. These barbarians burned the palaces, libraries and temples of Knossus. Those of the learned and cultured Cretans who could do so fled in ships to the still civilized shores of Asia Minor, Syria and Egypt.

While the Greeks in the second half of the first millenium B.C. were driving civilization back toward its center, others of the Indo-Europeans of the steppes had passed north of the Caspian Sea and entered the plateau of Iran. They lingered there for generations—long enough, according to Professor Louis Gray of Columbia University, to produce the literature known as Vedas. They then divided, one group went southwestward into Mesopotamia and the other southeastward into India. This common origin in the steppes explains the remarkable similarity of the Greek and Sanskrit languages.

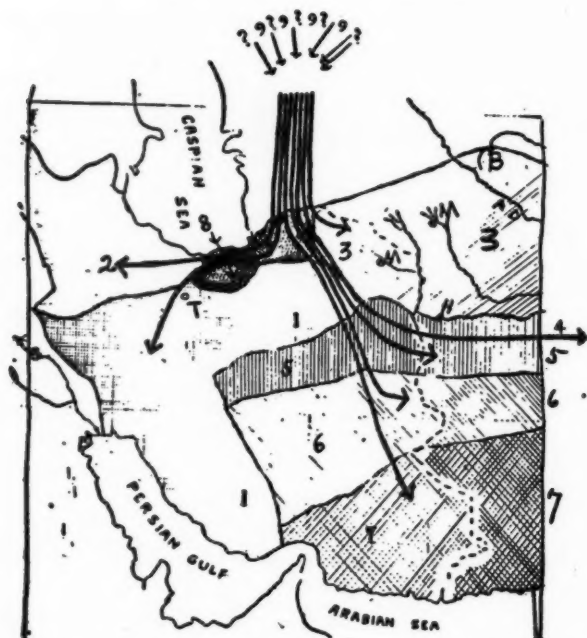


FIG. 8.—Louis H. Gray, specialist in the origins of languages, presents this map to show the locations of various groups of Indo-Europeans after they had seized their lands in the Plateau of Iran and Turkestan. 1—Persians: 2—Medes: 3—Margians and Bactrians: 4—the oft-traversed route to India: 5—Drangianians and Anachorians: 6—Carmanians: 7—Gedrosians: 8—Hyrcanians: 9?9?—Indo-European homeland before dispersal. Note the present boundary of Iran (Persia).

T—Tehran: H—Herat: M (west)—Meshed: M (east)—Merv: B—Bukhara: A.D.—Amu Darya.

Beginning about 1200 B.C. many waves of these Aryans went into India. They overwhelmed the Indus Valley cultures. Professor Walter Von Brunn of the University of Leipzig (Science News Letter, 2/19/1938) pointed out in 1938 that the remains of Mohenjodaro, Chanhudaro and other Indus Valley cities of 3500 B.C. had no signs of having had walls or other fortifications. From this fact he inferred that continuous peace prevailed in the era before the eruption of the horsemen from the steppes. Perhaps this was the Golden Age.

These cities on the Indus plain had houses of well-burned brick. The present inhabitants of this area live in mud villages. Fifty-five hundred years ago Mohen-Jodaro, built of brick, had a sewer system equal to that of Pompeii and other Roman cities that were built more than 3000 years later.

All this the northern invaders destroyed, destroyed it so completely that we only learned of its existence by accidental discoveries in the 20th century. Imagine if you can the thoughts and feelings of the cultured people of Mohen-Jodaro as these early Nazis destroyed a city that had stood for centuries in peaceful prosperity.

India received many waves of these new raw men from the steppes. As a result Indo-European languages prevail today over large areas in north-western India. The other results of these migrations can be observed today by any one who passes northwest from southern India to the Khyber Pass and observes the gradual change in the color of the skin of the inhabitants. The color of native skin is black in Southern India, white in the Khyber Pass, with various shades between.

The culture that originated in the warm and fertile valleys spread eastward to China, westward to the Aegean, and also, at an early date it spread northward to the highlands of Iran and Armenia where, as in China and in Crete, a civilization arose in part on borrowed culture elements.

In the third millenium B.C. non-Indo-European peoples in what we now call Armenia had a considerable culture, with cities and written language. Babylonian colonists settled among them, and the Mesopotamian cuneiform characters were added to their writing.

Early in the third millenium there came among them a migration from the steppes, "an Indo-European conquering people called by us 'Hittites.'" The invaders stayed, learned, increased and made an empire. Recent excavations show that Hittite scholars mastered six languages and were in "no way inferior to the Babylonians and Egyptians" (*Encyclopaedia Britannica*). Hittite armies conquered Babylon.

In 1685 B.C. a band of people called Hyksos whose leaders are said by Speiser to have come from Turkestan, organized an army in the Hittite area and proceeded to conquer Egypt. This expedition took the horse to Egypt for the first time. The horse-drawn chariot of the Hittites was an early kind of "blitz" warfare. It overwhelmed the Egyptians, perhaps with the aid of better bronze for the cleaving of skulls.

At this point in our narrative the record stands as follows:—four civilizations—Crete, Indus, Mesopotamia, Egypt—overrun by the horse-using Indo-European barbarians from the steppes. It was indeed fortunate that the seed of civilization was not destroyed by these conquests.

The Hittite Empire fell before the next wave of Indo-Europeans, horsemen from the steppes. These were called Phrygians. These horsemen entered Asia Minor by way of the Hellespont. Like the Greeks at Knossus the Phrygians destroyed so well that it was only at a recent date that we knew much about them,—and only in a very recent day that scholars de-

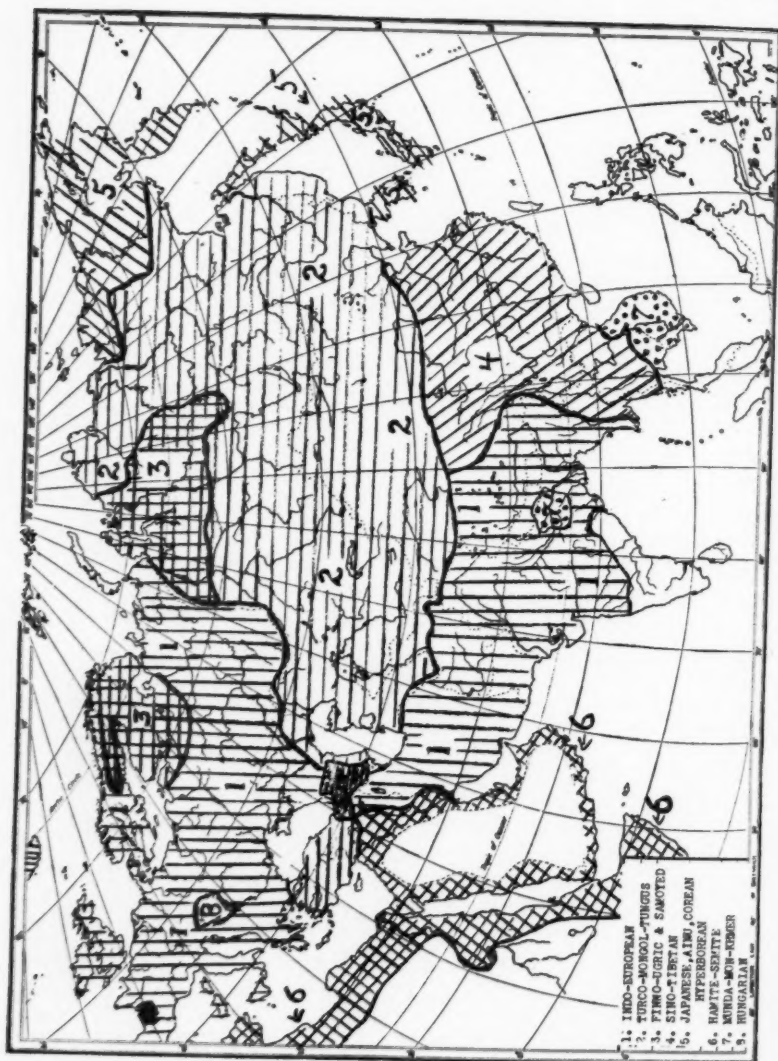


FIG. 9.

ciphered the Hittite writings. Fortunately, these people wrote on bricks of clay, rather than the perishable and ephemeral rubbish on which we write so voluminously.

This episode of the Hittites can almost be considered the west Asian history-cycle type, a type that is repeated through several millennia. Witness its operation in another group—the Scythians.

Herodotus described the Scythians (sometimes called a tribe of Cimmerians) as being nomads of the steppes north of the Black Sea. The Scythians followed their flocks on the open steppes in the summer,—back to the shelter of the wooded stream banks in winter. The men rode horseback with their trousers—a steppe invention—tucked into their boots—another steppe invention. The women rode in wagons. The details of their life sound strangely like those of the present day Kirghiz of Central Asia. Horse flesh and mare's milk were standard articles of diet. The abode was a tent of felt.

In the seventh century B.C. there was much movement of peoples on the steppes. "The Scythians overran and frightfully ravaged wide areas of Central Asia and Eastern Europe" (Bishop). Some crossed the Hellespont into Asia Minor, which they ravaged, and where they stayed for a century. Some went somewhat further east and developed a kingdom in Ecbatana, within the present kingdom of Iran. Thus strengthened, refreshed and multiplied, but still full of the barbarism of the plains, the Scythians harried the Assyrian kingdom, destroyed Nineveh and other cities, and advanced to the gates of Egypt. The Scythians then disappeared from history—probably absorbed. But note the evolutionary steps. A horde of nomads had left the steppes, harried the plateau. They tarried for a few generations. Almost surely their numbers increased, and they mustered strength in that land of better pastures and scattered oases. They then moved on to a career of conquest and rapine in the fat lands and rich cities of the plain. Then the melting pot absorbed them. That is the cycle. It occurs and recurs through nearly 3000 years B.C. and plenty of times later.

FIG. 9.—(After Louis H. Gray) Areas of language groups. They mark the trail of migrations.

The Indo Europeans dominated Northern India and even Burma so thoroughly as to leave their language. The original Dravidian speech holds the south of India and an island of Munda-Mond-Khmer (Indo Chinese) holds out in the Ganges Valley. The Sino-Tibetan has pushed down and crowded Munda-Mond-Khmer into a corner.

The Turco-Mongol-Tungus group has pushed the Japanese group into corners on the east and cut the Indo European area in two on the west. The Hamite-Semite has crowded Indo European in the Mesopotamian area. The Arabs left Islam in Iran but not their language.

The Indo European block holds nearly all Europe except the Finnish area, the Hungarian remnant, and the Basque and Caucasus areas. The Caucasus Mountain area seems to have been an island of human refuge in the sea of migrations. It contains much linguistic and human flotsam and jetsam. It is said that 72 languages are spoken in Tiflis.

The exploits of the Medes and Persians and of the Macedonians, conquerors all of Babylonia, fit closely into this pattern. The horse, the most spectacular contribution of the steppes, has played a curious and striking part in man's affairs in Eurasia. Bishop thinks that the Scythians may have been the first effective cavalymen. Armed with a compound cross-bow, which seems to have been an invention of the north, a cavalryman could ride circles around a charioteer. Hence, the use of chariots in war declined in the Near East after the Assyrians, in the ninth century B.C., adopted cavalry from their enemies, the Scythians.

Man's experience in learning to use the horse serves to illustrate the stupidity of man rather than his cleverness. Perhaps most persons have thought of the horse in ancient history as a beast of burden, drawing the plow, the cart and the wagon with supplies for home or the army, with gentlemen and generals riding on comfortable saddles. Not so. It is now known that the first important use of horse in harness in the Near East was a thousand years at the war chariot. For this service it was speed that counted, not ability to draw heavy loads.

The chariot was distributed to Ireland and Korea between 2500 and 1000 B.C. After centuries of using the chariot as an instrument of warfare men began to fight from the back of the horse. But it was more centuries before the stirrup was invented. Moreover, man used the horse in harness for more than 3,000 years before a method was devised whereby a horse was fastened to a wagon by means of traces. Only then could a horse pull with more than a small fraction of its strength.

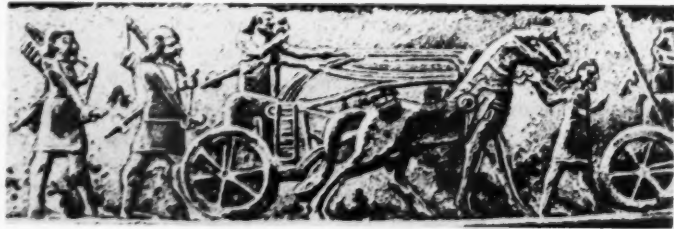


FIG. 10.—(After des Noettes) Thus did Shalmanesar King of Assyria (Mesopotamia) celebrate his victories 840 B.C. in "imperishable" stone.

The shoulders of the ox and donkey are higher than are the necks. These beasts with yokes upon their shoulders or upon the head of the ox, pulled the plows and wagons of antiquity. The anatomy of the horse does not encourage yoking. Nevertheless the ancients fastened the yoke to a band around the neck of the horse. If the horse pulled with considerable fraction of his strength the band pressed upon the windpipe and jugular vein and

choked him down. This harness also held his head high, but when a horse pulls a load he puts his head down. Pictures of war chariots show they did not carry much load, and Roman records verify.

Early uses of the horse sift down to this—meat supply, milk animals, assistant to the herdsman, the pet of princes, for pageantry, religious ceremonies and war,—especially war.

The horseman with a crossbow was the greatest "blitz" before gunpowder. This brought the horse to his Golden Age, to his zenith as an influence in the affairs of man. From the beginnings of cavalry with the Scythians, about ninth century B.C., to the date of the effective use of gunpowder, more than 2000 years later, the cavalryman of the Eurasian grasslands almost continuously harassed the settled cultures upon the grassland rim and often smashed them at will. Thus the horse, the great contribution of the Eurasian grasslands to history, *had several millenia* during which his relation to sedentary societies was not primarily in the field of economics, but in the field of war; not primarily at defense, but rather the war of offense. The horse was an instrument of conquest and destruction of peoples, cities, governments and social organizations.

In the Chou Kingdom in China, 1000 B.C., the Minister of War was known as "The Master of the Horses." The Chous had no currency. Taxes were collected in kind, and the chief tax gatherers were known as "bullock drivers." For many centuries over wide areas in three continents kingdoms were measured by the number of chariots they could put in the field. (See King Solomon.)

A recent writer, Bates, emphasizes the acute shortage of power among the Romans on both sea and land. This power shortage led to the use of the galley slave at sea and of slaves to turn the mill and to do other drudgery on land. Bates alleges that Roman wars were often little more than slave-gathering expeditions.

In the 9th century A.D., someone, apparently in France, invented the horse collar and traces. A horse could then pull a load. Then, as Mr. Bates tells us, horses could really work and enter the economic realm. Horsepower became cheaper than slavepower, and slavery gave way to serfdom. As mechanism improved, serfs became freemen. Inventions gave man equipment that permitted him to emerge from the slave age. At a much earlier time inventions had ushered in the Stone Age. Most important inventions change man's relation to some part of the earth.

The horse, especially the horse bearing grassland man upon its back, seems to have carried destruction to ancient societies in a way that suggests a strong resemblance to the work of the airplane today.

CHINA AND ITS RELATION TO THE GRASSLAND

The relations of China with the grasslands of Central Asia fall into two epochs. In the first epoch China *received culture elements*. In the second epoch China *received conquerors and destroyers*.

Considerably before 3000 B.C. Babylonia had a well-developed culture which included writing and a complete mastery of work in bronze. Babylonia also had wheeled vehicles, ox-drawn plows, wheat, many other crop plants, and all of the common domestic animals except the horse (Bishop).

There is no evidence that China had knowledge of metals before 2000 B.C., but 500 years later peoples ruled by the Shang Dynasty in the central and lower Yellow River Basin had a mature and developed system of writing, evidently homegrown. These peoples also had a skilled technique for working in bronze. Bishop says, "bronze working was carried to a pitch of technical and esthetic excellence hardly if ever equalled in later times in any land." Much of this craftsmanship was undoubtedly borrowed, together with many plants and animals, from the Near East. It had taken the Mesopotamians several thousand years to develop these things.

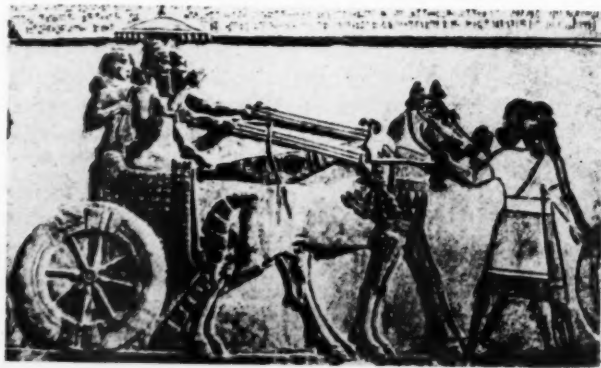


FIG. 11.—(After des Noettes) Tiglathpilesar, 745-727 B.C. left this monument to human stupidity. Note the tongue of the chariot higher than the horse's back and, far up the horse's neck, the choker to which the tongue is attached. Compare Fig. 10.

The Romans were not much better. Trojan 70 A.D. celebrated his Danubian victories with a half mile or so of sculptures winding round and round his well-known column. There are horses there but no stirrup, no horse collar, no trace (attachment to horse's shoulder). Trojan's horses pulled less than those of Tiglathpilesar. Indeed they pulled not at all—according to sculpture. Men with dangling legs sat astride them.

Before Chinese contact with the Near East, the Stone-Age man of the loessial area on which Chinese culture is believed to have developed, was a sedentary agriculturist. He lived at least for the colder part of the year in a pit house which gave unusual opportunity for the preservation of archaeo-

logical records. These pit dwellers had dogs and many domesticated pigs. As early as the fifth millenium B.C. they cultivated millet and some leafy plants (Goodrich).

There is no sign of fortification about their villages until culture elements from the Near East appear—sheep, and bronze or copper arrow tips. The need for defense had come. The villages of the pit dwellers now have earthen walls. These tillers of the loessial lands are learning unpleasant things from the west whence they had derived so many useful things.

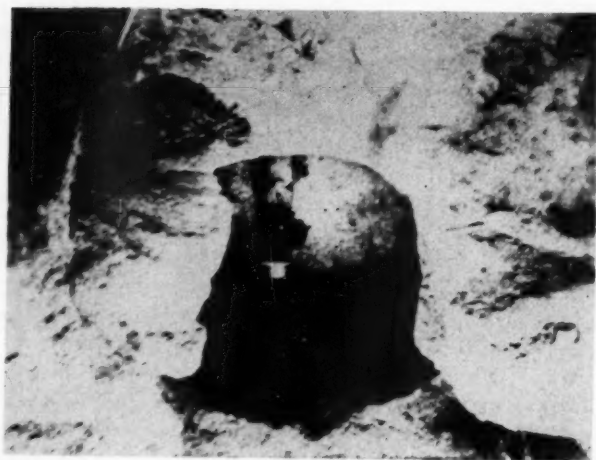
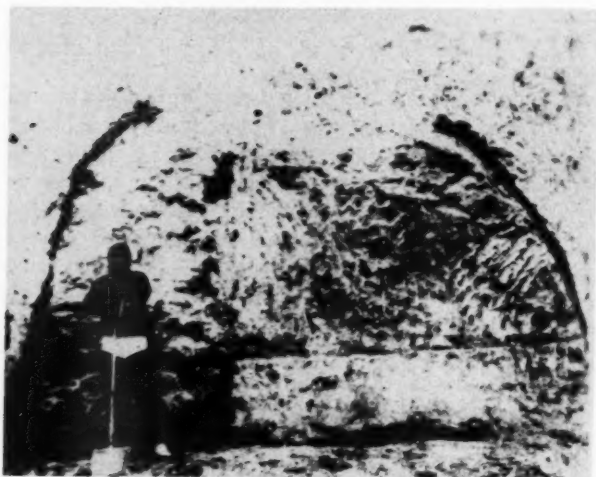
About 1050 B.C. (according to Bishop), the Shangs were conquered by the Chous, assisted by rebellious Shang subjects. The Chous came in from inner Asia—conquerors from the grasslands. About this time, also, other outsurges of steppe peoples went into Europe, southwest Asia and Egypt.

Ellsworth Huntington will smile with satisfaction at the mention of the Chinese tradition to the effect that the Shang dynasty came to its end during a period of protracted drought for which the king was held responsible because he neglected to observe the proper rites. Bishop states that the conquering Chous had a culture much like that the Aryans who invaded India about 1200 B.C.

Shang refugees fleeing before men from the grassland carried their culture eastward and southward to outlying regions hitherto barbarous. This oft-repeated process of culture spreading is now being again repeated as the educated Chinese from the westernized east coast of China move their colleges and industries to the conservative western uplands to escape the Japanese destroyer.

In the first millenium B.C. this process of grassland invasion and eastern culture dispersal was repeated several times. The unification of many kingdoms into one Chinese empire is commonly attributed to the fact that about 300 B.C. one of the western kings adopted a new technique of warfare from the barbarian enemies of the steppes. This was the mounted bowman—an irresistible blitzkrieg much superior to the lumbering chariot—the preceding blitz.

The Great Wall of China rose as a tribute to the marauding horsemen of the steppes. One might almost say it is a monument to the horse. This, the greatest structure in volume reared by man, was built steadily during the 7th, 6th, 5th, 4th and 3rd centuries B.C. and often thereafter even as late as the middle of the 18th century. Although the wall was designed to keep the nomad of the steppes out of the farm lands, it was only a limited success as is shown by the conquests of China by Tatars, Mongols and Manchus. These cavalrymen from the steppes could conquer China. They spread terror and rapine and made periods of chaos. The conquerors established dynasties. The dynasties melted away. The Great Wall still remains, four-



FIGS. 12 and 13.—(After Carl Bishop) These pictures show a pit house before and after its recent excavation. The pithouse style of architecture is the archaeologist's gold mine for the recovery of the domestic record. Wind-blown soil continually building up aids its effectiveness.

teen hundred miles of it, in varying degrees of decay or ruin. But the nomad conquerors that rode through the wall in shouting triumph have



FIGS. 14 and 15.—(After Carl Bishop) This record from an old Chinese tile tells us why the Chinese built the Great Wall. A new blitz had come from the Grassland. The horseman with the cross bow seems to have been well-nigh irresistible, hence the wall.

disappeared completely, having been absorbed by the great mass of the Chinese people. Meanwhile the Chinese peasant still keeps on with his not-yet-so-greatly-modified neolithic type of agriculture.

ROME AND THE NOMADS FROM THE EAST

The unfortunate experiences of the late Roman Empire with the semi-nomadic Germans and the Huns (Turanians, not Indo-Europeans) of Asia and Mongolia are a standard part of school history. Bands of marauding horsemen, recognizing no law but the power of conquest, came out of the land north of the Black Sea, crossed the Danube, harried without mercy the eastern empire and collected tribute from Byzantium itself. Eastern Goths, Western Goths, Vandals, Huns, Alans, Bulgars in turn punished the provinces of Rome both east and west for having been prosperous enough to produce material worthy of pillage.

The Bulgars remain as a name—their language has been absorbed by that of the Slavs whom they conquered and ruled. The Alans melted away as did the Scythians in the fat lands of Mesopotamia a thousand years earlier, and as the Mongols did in China a thousand years later. Many of the Huns of Attila's empire merged with the conquered, but one group went back to the grasslands of South Russia. Some four hundred years later they returned to the Plain of Hungary, where today they are the only remaining citadel of their language.

THE ARABIAN GRASSLAND EXPLODES

The 7th and 8th centuries of the Christian era witnessed the entry of the Arabian grasslands into the history of Eurasia in a large way. It was not the first time that Arabia had played a part in the history of lands beyond its border. One of the first recorded conquerors of Mesopotamia was Sargon the Akkadian, 3800 B.C. Sargon was a Semite, presumably from Arabia. Arabia is regarded as the original Semite nest.

In Roman times succeeding generations of Arab horsemen harried the Roman Empire. As the 7th century A.D. opened, Arabia was a political chaos of independent oasis settlements and endlessly quarreling nomad tribes.

A genius appeared upon the scene in the person of Mohammed, who preached patriotism and religion. He used the sword to advance his precepts and when he died in 632 A.D. Arabia was united.

The followers of Mohammed started a career of wider conquest. The Arab horsemen and camelmen rode east, west and north. In a few years they had conquered Mesopotamia, Persia, Palestine, Syria and Egypt. In less than a century they had crossed the Ganges and the Pyrenees, conquering all the lands between. Their defeat at Tours in France in 732 by Charles Martel, who drove them back into Spain, is one of the very important turning points of history.

THE MONGOLS AND THE TATARS

The eruption of the Arabs from their grassland was unrelated to happenings in the greater grassland of the present Russian domain. The central grassland of Eurasia kept on producing horses and men and marauding. In the 9th century a Russian chronicler recorded one of their many pillaging raids. "Whence they came," he lamented, "God only knows, and whither they went, God only knows, but while they were here they were terrible."

Unfortunately, later generations of eastern and southeastern Europeans knew more than this about the Mongols and the Turks. These sons of the grassland came and remained to rule.

Genghis Kahn (Perfect Warrior), 1162-1227, son of a Mongol chieftain, was a supreme genius. He was probably the greatest cavalryman that ever lived. In thirty years Genghis the Cavalryman spread his empire eastward to the Yellow Sea and westward to the Adriatic and the Baltic. Mediaeval Europe salved its sore vanity by saying that Genghis overwhelmed by myriad numbers. Not so. He won by discipline, strategy and tactics. He was a master of speed. The armies he defeated were usually much larger than his own, but he had more men at the point of combat than had the enemy—"The mostest men there fustest" (Forrest, C.S.A.). In one forenoon Genghis left 70,000 Europeans dead on the plain of Hungary, and then "reduced three quarters of Hungary to ashes."

It is reported that the strategy and tactics of Genghis Kahn have been most carefully studied by Hitler and company. Equipment may change, but the effectiveness of strategy and surprise remains. Genghis seems to have been a true Nazi. He softened up prospective victims by propaganda, got information by spies, and attacked because he thought he could win. Details of his equipment and effective methods stand in reference books for those who wish to read them.

These Mongols conquered cities but camped without, in tents, as nomad warriors should. As he walked through a gutted Russian city a Mongol warrior kicked a bag of gold coins out of the way, remarking as he walked on, "a heap of good it did him."

It is said that Genghis' generals urged him to cleanse North China by massacring the millions of agricultural human vermin who inhabited it. Genghis said "no," but his successor slaughtered the entire population of Baghdad, perhaps some 700,000 in number.

If Russia has been somewhat backward in comparison to some other European countries in recent generations, we should remember its complete submergence beneath the Mongol horde nearly a thousand years after the Roman Empire had its somewhat similar but less thorough destruction at the hands of mobile horsemen from the steppes. Parts of European Russia are still inhabited by several groups of the descendants of these Mongoloid Asiatic invaders. Their numbers run into millions. We might call them, and the Hungarians and the Finns, Asia's return for the settlements of Indo-Europeans in southwestern Asia. The Turks continued this reciprocity with ferocity.

THE TURKS

The Hwang Valley seems to have been the center of peoples who are called Mongoloid. Central and north central Asia was the center for peoples called Turanian. The names Turki, Turcoman, or Turk have been vari-

ously applied to a dozen or more of ethnic groups living west of the Great Wall and close kin to Mongol and Hun. The mobility of these horsemen of so-called Turkish stock was so great that in a short period they were to be found at Lake Baikal and also in Morocco, 7000 miles distant. When the Russians took Merv less than 100 years ago, the Turcomans of the nearby steppes were known by their neighbors as "the man-stealing Turks."

The Turkish group that conquered Constantinople has repeated the southwest Asia historical cycle with variations. They came from Turkestan, crossed a corner of Persia and settled in Asia Minor. There they increased, organized and crossed the Bosphorus. Passing the walls of Constantinople the invaders established themselves in southeastern Europe in the early 1300's. After generations of war they took Constantinople in 1453 and extended their empire into Hungary and South Russia. In 1683 the Turkish siege of Vienna was raised by John Sobieski, of Poland.

If you look at the map and locate Tours, the northernmost limit of the Arab invasion, and Vienna, the westernmost limit of the Turkish invasion, you will see that Christendom has been subjected to a menacing pincers movement. Fortunately, the different sides pinched in different centuries.

If anyone is inclined to criticize the Balkan peoples, for some cultural or especially for political shortcomings, let him remember that for 500 years the Balkan peoples were subjected to the tyrannous misgovernment of the Turks. The Turk ruled a wide empire of many peoples, but was able to establish his language only in Anatolia.

RUSSIA TAKES THE STEPPES

Gunpowder with muskets and cannon ended the career of the horsemen of the steppes after an undisturbed independence of unknown duration, and after about 4000 years, during which the horsemen overran almost at will their more civilized neighbors on the east, south and west. In 1580 the Russians with muskets, cannon and wagons crossed the Urals. In 300 years they subjugated the whole of central Asia and all its horsemen right down to the mountain walls of Persia, Afghanistan and the outer provinces of the old Chinese Empire.

The tables were turned. The mobile grassland horseman found himself dominated by a machine using sedentary man from beyond the grassland border.

It is interesting to contemplate the almost unchanging continuity of two culture types. East of the Great Wall, in the good farm land of the Chinese plain, the man with the hoe, the mud village, the brick temple. He was, and is, a peace-loving creature untempted by the lure of conquest, praying to be let alone in his garden. Instead he has been the victim of oft-repeated pillage.

West of the Great Wall the grassland man, riding a horse; living in a tent; menaced by perennial uncertainty of supplies of grass and water. His temptation to maraud was strong and oft-repeated. The mobile existence of the grassland man made it easy for him to raid and pillage. The grain bags of the man with the hoe offered an easy objective. Thus, for 4000 years grassland culture changed but little and the raiding nomad never ceased his attacks. Almost any year cavalry could muster on the plains and in irresistible numbers appear unannounced in the farmland beyond the mountain. Thus civilization after civilization and empire after empire developed in the farmlands and fell before the man from the grassland.

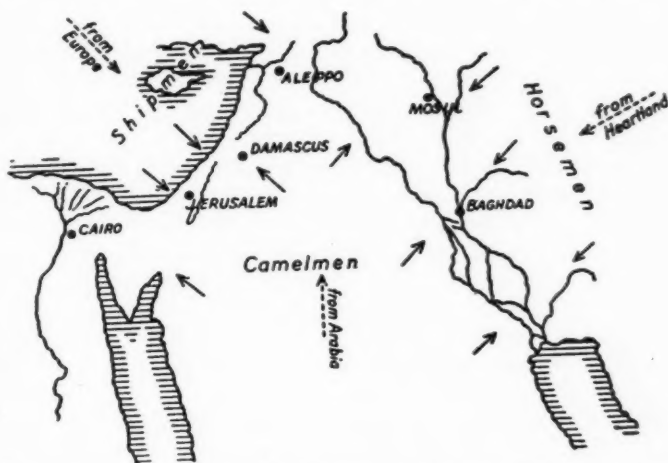


FIG. 16.—Human overflow from northern and southern grasslands, as shown by Mackinder in the book "Democratic Ideals and Reality." Small wonder that Mesopotamia, once so fruitful, has lain almost idle and almost empty for centuries and centuries.

Grassland society permitted and encouraged military power, often unlimited except by the whim and fancy of him who wielded it. Temptation to yield to the power lust was more frequent in the grasslands than in other environments. The power lust is unique among man's desires. The gratification of the desire for food, drink, sex, the pleasures of the chase, of workmanship, of the intellect, of creative art—the exercise of all these lead to satiety and sleep. But in terrible contrast, the lust for power grows by gratification. It runs away with the human spirit. At times it unbalances the mind. The Romans with the pitiful record of emperors before them had a word for it—"Imperial Madness."

History furnishes abundant illustrations. To read "Mein Kampf" and contemplate the actions of the Nazis proves the present and continuing menace of unchecked power. The dangerous thing is that the power lust is born in all individuals. It is even shared by some of the quadrupeds.

If the turbulent history of the Eurasian grassland has any message for this generation of men it is an imperative command to so organize our affairs that no race, nation or group can get into a position of unlimited power over other large groups.

Gunpowder and the railway reduced grassland *man* to impotence. They made him the vassal of the man from outside whose machinery could outrun the horse and outshoot the horseman's bow or rifle.

But what about this Eurasian grassland as a *stage and base of operations* in the world of tooth and fang, but equipped also with plane and bomb?

Mackinder pointed out at the end of World War I that land based air power would soon make the Mediterranean untenable to any kind of shipping. Here he showed himself a most true prophet.

The same reasoning applied to present and prospective techniques seems to make the rest of Mackinder's prophecy also true. For example, take a modern air force and let it fly the distance covered by the force that flew from Egypt to the Rumanian oil fields in August 1943. Base such a force on present Russian territory and it can bomb the Suez Canal and Bombay. Also it can bomb all of Japan and North China down to Shanghai and Hankow. And it would be a bold prophet indeed who would say that the limit of bombing range has been achieved. The old jealousy of the British Lion and the Russian Bear about the Afghan passes and their eager courtship of Afghan governments has become a back number in the air age.

If the Russians should wish to continue the expansion of their domain there is nothing to prevent an air force backed by ground force from taking the Mongolian and Central Asian plateaus. Railroads could then be built and air bases equipped within effective bombing range of Hong Kong and South China.

I suspect that Mackinder's fears are still with him and that they have grown a bit. He feared an effective alliance between Germany and Russia to produce a dominating weight of equipment. I wonder what he now thinks since he has seen what Russia alone has done, and contemplates what those hundred and eighty million people might do in another quarter century if the germs of the old grassland conquest fever should rise up out of the grass and infect them with the desire to dominate Asia—and then—?

History, both ancient and recent, has vindicated Mackinder. It has also vindicated Woodrow Wilson's dictum that if any people or nation is not safe, no nation is safe. Immensely strengthened is the argument for world

organization to outlaw war. If our intelligence is any greater than that of the sheep or the cow we will strive for international organization that is equipped for:—

1. The removal of international tensions before they make explosions.
2. The treatment of any war as we treat smallpox and rabies.

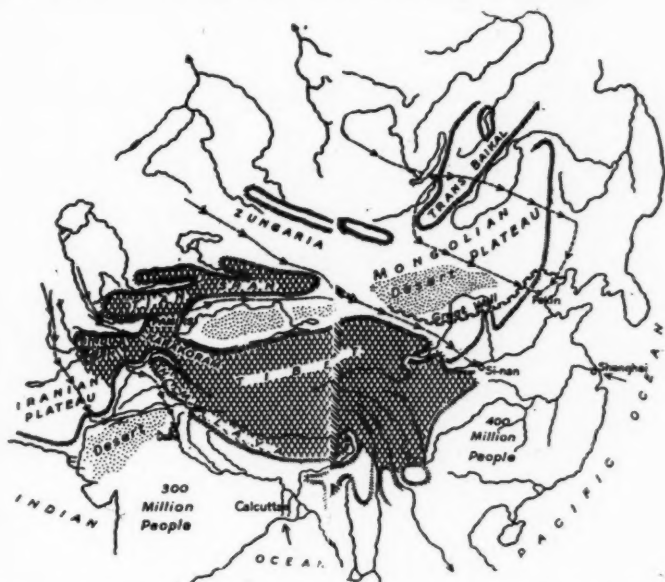


FIG. 17.—Topography and routes of conquest and migration from the Grassland (after Mackinder). Note the Zungarian Gate, opening a marauders' road from grassland toward farm lands.



